

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/092244 A3

(51) International Patent Classification⁷: C08G 59/68

(21) International Application Number:
PCT/EP2004/050503

(22) International Filing Date: 13 April 2004 (13.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0697/03 16 April 2003 (16.04.2003) CH

(71) Applicant (for all designated States except US): HUNTS-
MAN ADVANCED MATERIALS (SWITZERLAND)
GMBH [CH/CH]; Klybeckstrasse 200, CH-4057 Basel
(CH).

(72) Inventor; and

(75) Inventor/Applicant (for US only): WEIDMANN, Ulrich
[DE/CH]; Habsburgerstrasse 38, CH-4055 Basel (CH).

(74) Agent: MAUÉ, Paul Georg; Solvias AG, Patents, WKL-
402.3.04, Klybeckstrasse 191, CH-4002 Basel (CH).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

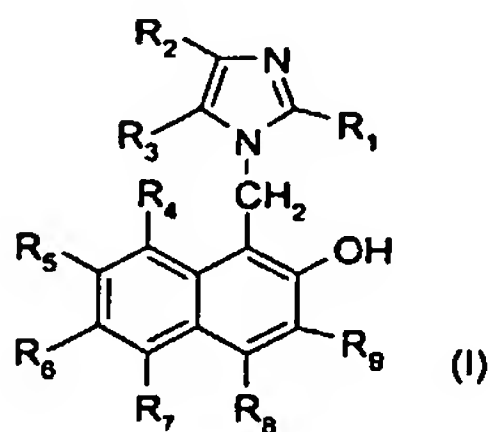
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
23 December 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: ACCELERATOR SYSTEMS FOR LOW-TEMPERATURE CURING OF EPOXY RESIN COMPOSITIONS



(I)

(57) Abstract: Composition comprising as component A) a 1-imidazoly[mothyl-substituted 2-naphthol compound of the general formula (I) where R₁, R₂ and R₃ each independently of one another are H; C₁₋₁₇alkyl; C₃₋₁₂cycloalkyl, optionally substituted by C₁₋₄alkyl groups; C₄₋₂₀cycloalkyl-alkyl, optionally substituted by C₁₋₄alkyl groups; C₆₋₁₀aryl, optionally substituted by 1-3 C₁₋₄alkyl groups; C₇₋₁₅phenylalkyl, optionally substituted by 1-3 C₁₋₄alkyl groups; C₃₋₁₇alkenyl; C₃₋₁₂alkynyl; or aromatic or aliphatic C₃₋₁₂acyf; R₄, R₅, R₆, R₇, R₈, and R₉ each independently of one another are H; C₁₋₁₂alkyl; C₃₋₁₂cycloalkyl, optionally substituted by C₁₋₄alkyl groups; C₄₋₂₀cycloalkyl-alkyl, optionally substituted by C₁₋₄alkyl groups; C₆₋₁₀aryl, optionally substituted by 1-3 C₁₋₄alkyl groups; C₇₋₁₅phenylalkyl, optionally substituted by 1-3 C₁₋₄alkyl groups; C₃₋₁₇alkenyl; C₃₋₁₂alkynyl; C₁₋₁₂alkoxy; or OH; and as component B) a phenol which is liquid at room temperature, the weight ratio of component A) to component B) being from 10:90 to 80:20. as accelerator for curable epoxy resin compositions which are used as a compression moulding compound, sinter powder, encapsulating system, casting resin, or for producing prepreps and laminates having very good interlaminar shear strength values using impregnating methods or injection methods, for producing components, especially components of large surface area.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/050503

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C08G59/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 761 709 A (CIBA GEIGY AG) 12 March 1997 (1997-03-12) cited in the application claim 1; examples 1-7	1-12
A	PATENT ABSTRACTS OF JAPAN vol. 0122, no. 83 (C-518), 3 August 1988 (1988-08-03) & JP 63 061016 A (NEW JAPAN CHEM CO LTD), 17 March 1988 (1988-03-17) abstract	1-12
A	EP 0 086 102 A (CELANESE CORP) 17 August 1983 (1983-08-17) claims 1,2	1-12
-/--		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

*** Special categories of cited documents :**

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

26 October 2004

Date of mailing of the international search report

03/11/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

O'Sullivan, T

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/050503

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/058756 A1 (KONARSKI MARK M) 16 May 2002 (2002-05-16) sentence 25, paragraph 63 -----	1-12
A	YOSHITOMI PHARMACEUTICAL INDUSTRIES ET AL: "1-(1,2-Dihydronaphthalen-3-ylmethyl or 2-indenylmethyl)imidazoles" CAPLUS, 1981, XP002163356 AN- 1981-587256 abstract -----	1-12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/050503

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0761709	A	12-03-1997	US 5591811 A	07-01-1997
			BR 9603729 A	26-05-1998
			CA 2185207 A1	13-03-1997
			DE 69608054 D1	08-06-2000
			DE 69608054 T2	11-01-2001
			EP 0761709 A2	12-03-1997
			ES 2146378 T3	01-08-2000
			JP 9118741 A	06-05-1997
			TW 487721 B	21-05-2002
JP 63061016	A	17-03-1988	JP 1812687 C	27-12-1993
			JP 5021926 B	26-03-1993
EP 0086102	A	17-08-1983	CA 1206687 A1	24-06-1986
			DE 3363857 D1	10-07-1986
			EP 0086102 A2	17-08-1983
			JP 1611109 C	15-07-1991
			JP 2036129 B	15-08-1990
			JP 58147418 A	02-09-1983
			US 4417010 A	22-11-1983
US 2002058756	A1	16-05-2002	US 6670430 B1	30-12-2003
			US 2003190479 A1	09-10-2003